REMARKS

Claims 86-116 are pending in the application. Of these, claims 93, 95-98 and 105-116 are withdrawn from consideration and claims 86-116 are subject to restriction and/or election.

Election/Restrictions

Claims 111-116 directed to an antibody are withdrawn from consideration because the Action takes the position that the originally filed claims were only to a GIP antagonist and that a related antibody is a distinct invention. The Examiner concludes that the originally presented invention has been constructively elected for prosecution. Applicants respectfully traverse and request reconsideration.

Applicants believe that they are entitled to claim a monoclonal antibody that recognizes the amino acid sequence of SEQ ID NO:5, for reasons of record. Because the Examiner has withdrawn the claims 111-116 in a final office action, Applicants retain the right to refile in a subsequent application without prejudice.

Claim 93 is rejected as encompassing an invention independent from the original claim because the present claim is directed to a method of identifying an antagonist of GIP receptor, while the original claim was to a GIP antagonist.

Applicants reserve response to the rejection of claim 93, except to the extent that the method was intended as a screening method. Amendment to claim 94 reflects clarification of the use of the identified antagonists in a screening process.

Claims 95-98 and 105-110 are related as product and process of use. It is the Examiner's position that the process for using the product as claimed can be practiced with another materially different product, particularly in that the originally claimed invention can be used in an immunization protocol for antibody production or to identify an antagonist of

GIP receptor. The Action submits that the originally presented invention has been constructively elected by original presentation for prosecution.

Applicants reserve the right to refile the withdrawn claims in a divisional or continuation application.

Double Patenting

Claims 86-92, 94, 99-104 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claim 36-45, 51, 53, 55, 58-67, 73, 75, 77, 83 and 85 of copending application no. 10/003,674. The Action has reminded Applicants that there is no right after final rejection to amend, add or reinstate previously cancelled claims.

While Applicants are aware of 37 CFR 1.116 in this regard, they wish to postpone filing a terminal disclaimer until such time as allowability of any of claims 86-92, 94 or 99-104 has been acknowledged.

Objections to the Claims

Claims 87-92 and 100-104 are objected to for being of improper dependent form for failing to further limit the subject matter of a previous claim. The Action objects because claim 86, from which these claims depend directly or indirectly, employs the term "consisting of" which does not allow for any change in the sequence of the peptide claimed or referred to in dependent claims.

Applicants have amended claim 86 to use of the term "consisting essentially of". This term limits the scope of a claim to the specified materials "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention, as stated in MPEP 2111.03, citing *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) with emphasis in the original.

Accordingly, claims 87-92 and 100-104 properly depend on claim 86 because the modifications to sequence number 5 retain the same basic and novel characteristics.

Claims 90 and 91 are objected to under 37 CFR 1.75(c) as being of improper form with respect to multiple dependency. Applicants have amended claim 90 and 91 to address this objection.

Claim Rejections Under 35 U.S.C. §102

Claim 99 is rejected under 35 U.S.C. §102(b) as anticipated by Moody. Moody is asserted to disclose isolation of GIP, which comprises the sequence of SEQ ID NO. 5. The Action concludes that Moody discloses a 21-mer isolated polypeptide at least 95% identical to SEQ ID NO. 5.

Applicants do not have a reference for Moody; however, Applicants recognize that the sequence of the full GIP protein was known. Applicants have amended claim 99 to clarify that the claimed sequence is not embedded in the GIP peptide; rather it is the 21-amino acid polypeptide of SEQ ID NO:5 or its functional polypeptide 21-amino acid analogs.

Claim 94 is rejected under 35 U.S.C. §102(b) as anticipated by Ebert (Endocrinology, 111(5): 1601-6 (1982). Ebert is said to describe a GIP antiserum or antibody that completely blocks insulinotropoic effect of exogenous porcine GIP. The Action takes the position that the claim does not distinguish between the claimed GIP receptor antagonist and Ebert's antiserum or antibody.

As amended, claim 94 is directed to screening for GIP antagonists as competitive inhibitors of the compounds related to SEQ ID NO:5 that bind to GIP receptor. The screening method does not screen for antibodies.

Claims rejections under 35 U.S.C. §112, First Paragraph

Claim 94 is rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement such as not to reasonably convey to one skilled in the art that the inventors had possession of the invention at the time the application was filed. The Action takes the position that the process from which the GIP receptor antagonist depends does not limit the antagonist of claim 94 because there is not a showing that the product obtained has a unique property that could not be attained by other processes.

Claim 94 as currently presented is a screening method which does not require that the product identified could not have been found by another method. The screening process is novel because it employs a unique GIP antagonist to screen candidate compounds for antagonist activity.

Claims 87, 90, 94, 99-104 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description. The claimed subjected matter is asserted as not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors at the time the application was filed had possession of the claimed invention. More particularly, the Action takes the position that the following are not supported in the specification:

Claims 87, 104: Lys at position 9
Claim 93: method claim
Claims 100-101: neutral amino acid at indicated positions
Claims 102, 103: Asp at indicated positions.
Claim 90 claiming the polypeptide of claim 86 and the polypeptide of claim 88 and polypeptide having at least 95% identical to corresponding amino acid of Seq. ID NO. 5 (claim 99).

Claim 99 is rejected under 35 U.S.C. §112, first paragraph, as claiming subject matter asserted not to be described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors at the time the application was filed had possession of the claimed invention. It is the Action's position that the claims do not assert any biological activity nor show any particular conserved structure, thus failing to provide adequate written description in view of the requirements stated in *Vas-Cath v. Mahurkar*, 935 F.3d 1555,1563, 19 USPQ2d 1111, 1116, 1117 (Fed. Cir. 1991) and a requirement for the compound itself, as the Action asserts is supported in *Fiers v. Revel*, 25 USPQ2d 1601 and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ 2d 1016. The action also cites *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483 where it is asserted that identification of the compound is required.

The Action acknowledges that SEQ ID NO. 5 meets the written description requirements but does not acknowledge fulfillment of written description for the closely analogous analogs.

As presented herein for reconsideration, the claims indicate the function of the claimed polypeptides; for example, SEQ ID NO. 5 is described as being a glucose-dependent insulinotropic antagonist (supported throughout the specification.) Accordingly, Applicants submit that the rejection is overcome and reconsideration is requested.

Claims 87, 99-104 are rejected under 35 U.S.C. §112, first paragraph, for lack of enablement. The Action admits enablement for SEQ ID NO:5, but does not admit that there is enablement for the other claimed sequences without regard to functional activity. The Examiner notes that sequences 2,5,8 and 10 in the specification differ by a single amino acid residue, but considers that the claims drawn to a polypeptide at least 95% identical to SEQ ID NO:5 would not provide guidance to one skilled in the art to use the multitude of possible polypeptides without undue experimentation. Additionally, the Action maintains its position that predicting structure from primary sequence is unpredictable.

The legal standard for determining enablement in biotechnology cases is based on ability to make and use the invention without undue experimentation. Undue experimentation has typically been based on the factors set forth in *In re Wands*, 8 USPQ2d 1400 (Fed. Cir., 1988) and these factors include:

Quantity of experimentation necessary
Amount of direction or guidance presented
Presence or absence of working examples
Nature of the invention
State of the prior art
Relative skill of those of skill in the art
Predictability of the art
Breadth of the claims

Application of the *Wands* factors is not mandatory and, as set forth in *Amgen Inc. v. Chugai Pharmaceutical Co., Ltd.* 18 USPQ2d 1016 (Fed. Cir. 1991), the requirement for some experimentation does not mean that there is a lack of enablement, only that the amount of experimentation must not be unduly extensive. Thus the question is whether the scope of the enablement is sufficient to support the claim; *i.e.,* the experimentation necessary to practice the invention.

A consideration is whether or not the specification contains a sufficient description to enable one skilled in the art to make the claimed subject matter. In the application under examination, it is clear that several GIP sequences were isolated and tested (see examples 1 and 2, and the figures). The ability of anyone in the art to make different segments of GIP protein is not disputed. The synthesis of any of the claimed polypeptides would be routine for one skilled in the art. The issue raised by the Action appears to be breadth and undue experimentation.

Applicants have amended the claims to better define a genus of compounds. One skilled in the art would have a reasonable expectation that the amino acid substitutions (one single neutral amino acid to replace another neutral amino acid) would be functional equivalents. This is because there would be no expected change in conformation or

polarity due to the generally recognized equivalency of these neutral amino acids. In like manner, the substitution of his with lys (a basic residue) and asp with glu (acidic) would be expected to be equivalent substitutions. Applicants respectfully direct attention to the publications and argument submitted in their response to Office Action filed January 26, 2005 with respect to equivalencies recognized by those of skill in the art at the time the application was filed.

With respect to claiming compounds that are asserted to require "undue experimentation", Applicants respectfully direct attention to *Ex parte Jackson*, 217 USPQ 804,807 (PTO Bd. App. 1982) where "The determination of what constitutes undue experimentation in a given case requires the application of a standard of reasonableness."

It is Applicants' position that the claims are not unduly broad, that the number of compounds is limited to the indicated types and positions of the substitutions and that the polypeptide(s) claimed in the present application are defined by a definite length.

Claim 94 is rejected under 35 U.S.C. §112, first paragraph, as not enabled for claiming a polypeptide antagonist of GIP receptor identified as indicated in claim 94. The Action notes that a compound that is either an agonist or an antagonist could competitively inhibit binding of a GIP receptor antagonist to the GIP receptor.

Applicants submit that the amendment to claim 94 more clearly indicates that a GIP antagonist is intended.

Claim rejection under 35 U.S.C. §112, Second Paragraph

Claim 99 is rejected under 35 U.S.C. §112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. In particular, the term "corresponding to" is not clear because it could mean polypeptides at least 95% identical to SEQ ID NO:5 or to a structure similar to SEQ ID NO:5.

Applicants believe that the amendment to claim 99 has overcome this rejection.

The claims are directed to a genus of compounds that are GIP antagonists, allegedly encompassing any and all compounds possessing the desired functional activity. In general, the Examiner takes the position that the specification does not indicate what distinguishing characteristics are shared by members of the claimed genus and does not place any limit on the number of amino acid substitutions, deletions, insertions and/or additions so that numerous structural variants are included. The Action asserts that the genus is highly variant and that the 7-30 and 10-30 sequences are not sufficient to describe the genus. Applicants respectfully disagree.

As discussed, Applicants submit that the claims are not directed to unduly broad subject matter and that the indicated substitutions would not be expected to significantly alter the activity of the parent sequence. It is believed that those skilled in the art would recognize and have a reasonable expectation of such activity, based on the demonstrated activity of the parent, the means for testing activity, the limited number of compounds, the identification of the general regions of the sequence that contribute to antagonist activity, and the guidance provided throughout the specification. Moreover, Applicants recognized that "...peptide antagonists would appear to require...and some or all of the amino acids from 10-30 (SEQ ID NO:5...or effective alternative amino acids thereto are likely to promote binding to the receptor." (page 8, last lines in [0033]). As discussed, the "alternatives" discussed by Applicants were well recognized in the art.

In the interest of further clarifying the genus of compounds intended, claim 99 has been amended to more clearly defines the genus of compounds based on the structure and demonstrated activity of SEQ ID NO:5.

CONCLUSION

Applicants believe that all formalities have been complied with and a complete response has been submitted. It is respectfully submitted that this application is now in condition for allowance with claims 86-118. Should any issues remain or should the Examiner believe that a telephone conference with Applicants' attorney would be helpful in expediting prosecution of this application, the Examiner is invited to contact the undersigned at the telephone number shown below.

Respectfully submitted,

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